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(54) Improvements in or relating
to cistern overflow devices

(57) In a siphon-discharge w.c. cistern 1 a bypass pipe 5 of small cross-section is connected across the arms 3 and 6 of the siphon tube to act as a cistern overflow. The ends of the pipe 5 are secured to the pipes 3 and 6 by flanges 7 in an airtight manner. Because the pipe 5 is of small cross-section it will not interfere with the normal flushing operation of the cistern. However, if the water level in the cistern 1 rises above the normal level 2 water will be able to overflow down the outlet arm 6 of the siphon tube by passing from the bell 9 through the bypass pipe 5.

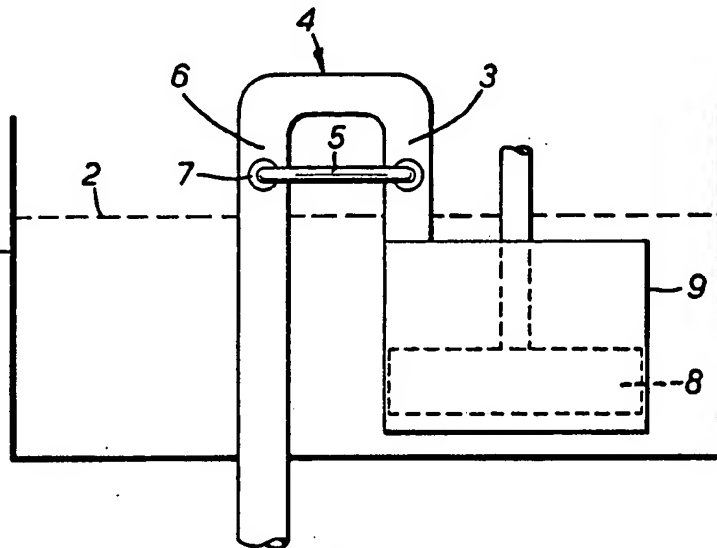


FIG. 1.

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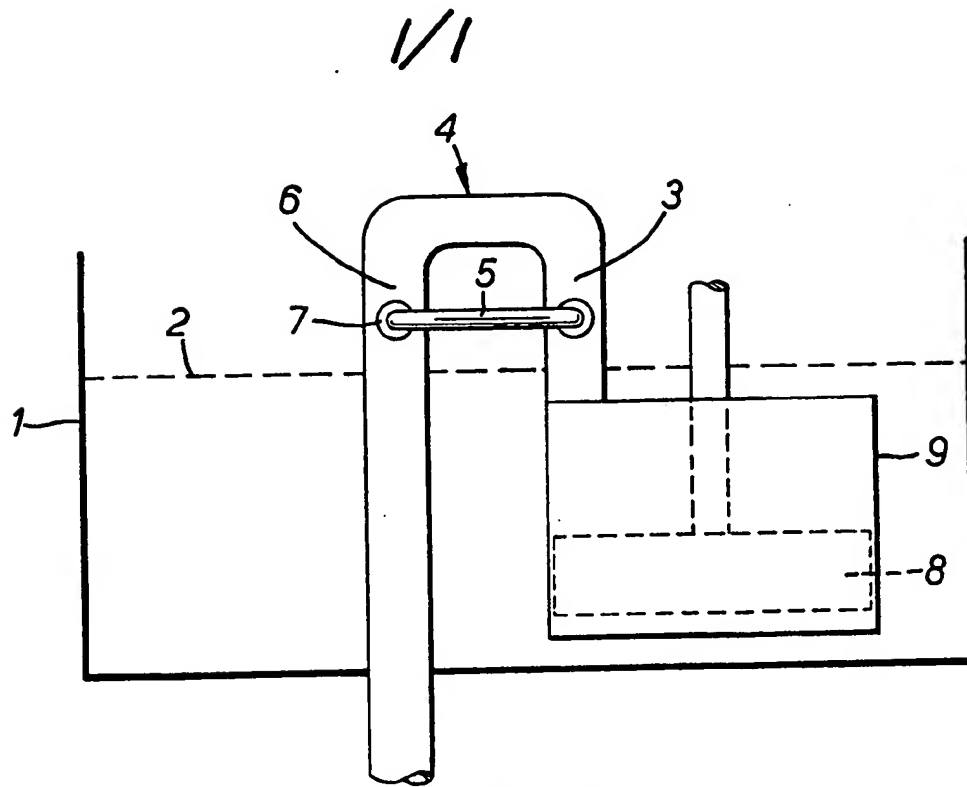


FIG. 1.



FIG. 2.

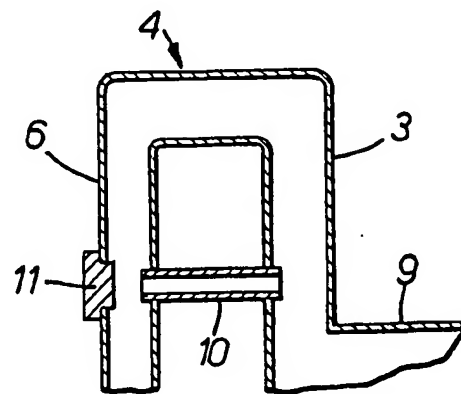


FIG. 3.

SPECIFICATION

Improvements in or relating to cistern overflow devices

- 5 The invention relates to devices for enabling water to overflow from a cistern, such as the flushing cistern for a toilet. The conventional arrangement is to provide an outlet pipe just
10 above the normal filling level which leads to the outside of the building. In some circumstances the overflow pipe can be difficult to install and overflowig water running through the pipe can be unsightly and even cause
15 damage to the fabric of the building.

It is an object of this invention to provide an overflow arrangement for a cistern which does not require an external outlet.

- Accordingly this invention provides an
20 overflow arrangement for a flushing cistern, wherein the siphon tube of the cistern has a bypass pipe of small cross-section connected across the arms of the U of the siphon tube at a level above the normal filling position of the
25 tank of the cistern.

- Thus when the level of water within the cistern rises above the normal level it will flow through the bypass pipe into the outlet portion of the siphon tube. During normal flushing the bypass pipe will not unduly affect the
30 normal siphoning through the siphon tube since this will be of a much larger diameter than the bypass pipe. In one arrangement the bypass pipe will be inserted through aligned holes in the siphon tube arms. This would
35 require the formation of an external hole in one of the arms of the siphon tube but this can be plugged by a closed end of the bypass pipe or by a separate plug. As a preferred
40 alternative the bypass pipe may be U-shaped and connected to holes formed in the sides of the siphon tube arms.

- The invention also extends to an adapter kit for modifying a flushing cistern to incorporate
45 an automatic overflow, comprising a bypass pipe of small cross-section for connection across the arms of the U of a siphon tube, a boring or cutting tool for forming holes in the arms of the siphon tube to receive the ends of
50 the bypass pipe, and sealing means for securing the ends of the bypass pipe in an airtight manner in the holes in the arms of the bypass pipe.

- Such a kit will enable the existing cistern to
55 be modified very readily.

The invention may be performed in various ways and preferred embodiments thereof will now be described with reference to the accompanying drawings, in which:—

- 60 *Figure 1* is a side view of a siphon tube of a flushing cistern incorporating a bypass modification of this invention;

Figure 2 is a plan view of the bypass pipe shown in *Fig. 1*; and

- 65 *Figure 3* illustrates a modified form of by-

pass tube inserted into the siphon tube of a flushing cistern, shown in cross-section.

- In *Fig. 1* there is shown a flushing cistern 1 having a water inlet controlled by a float valve (not shown) which allows the cistern 1 to be
70 filled to the normal level 2. If the float valve should malfunction for any reason the level of water within the cistern will rise but in doing so will rise up the inlet arm 3 of a siphon tube
75 4 until it reaches the level of a-bypass pipe 5. This pipe has been inserted in holes so as to bridge the arms 3 and 6 of the siphon tube. Flanges 7 on the bypass pipe 5 are secured in an airtight manner to the arms 3 and 6 of the
80 siphon tube 4. The bypass pipe 5 is of small internal cross-section as compared with the cross-section of the siphon tube 4 so that when normal flushing takes place water within the cistern 1 will siphon out into the outlet
85 arm 6 of the siphon tube 4 in the normal way.

- It will be appreciated that the bypass pipe 5 may be secured to the siphon tube of an arrangement which operates either by raising
90 a plug 8 within a bell 9 as shown or an arrangement where the complete siphon tube is lifted to initiate siphoning.

- In the arrangement shown in *Fig. 3* an existing siphon tube 4 has been modified by
95 drilling aligned holes through the arm 6 and into one side of the arm 3. A bypass pipe 10 is inserted through the three holes and is then secured in an airtight manner in relation to two of the holes formed in the arms 3 and 6
100 of the siphon tube 4. The outer hole is then closed by a plug 11. This device will then operate in the same manner as the one illustrated in *Figs. 1* and 2.

- A kit may be provided to enable an existing
105 siphon tube to be modified and this would comprise the bypass pipe 5 or 10 (with the plug 11) together with tools for cutting the required holes in the arms of the siphon tube 4 and equipment or materials for sealing the
110 bypass pipe into the holes in the siphon tube.

CLAIMS

1. An overflow arrangement for a flushing cistern, wherein the siphon tube of the cistern
115 has a bypass pipe of small cross-section connected across the arms of the U of the siphon tube at a level above the normal filling position of the tank of the cistern.

2. An overflow arrangement according to claim 1, wherein the bypass pipe is inserted through aligned holes in the siphon tube
120 arms.

3. An overflow arrangement according to claim 2, wherein an external hole is formed in one of the arms of the siphon tube and is closed by a plug, after insertion of the by-pass pipe.

4. An overflow arrangement according to claim 1, wherein the bypass pipe is U-shaped
130 and is connected to holes formed in the sides

of the siphon tube arms.

5. An overflow arrangement substantially as herein described with reference to the accompanying drawings.

- 5 6. An adapter kit for modifying a flushing cistern to incorporate an automatic overflow, comprising a bypass pipe of small cross-section for connection across the arms of the U of a siphon tube, a boring or cutting tool for forming holes in the arms of the siphon tube to receive the ends of the bypass pipe, and sealing means for securing the ends of the bypass pipe in an airtight manner in the holes in the arms of the bypass pipe.
- 10 7. An adapter kit as claimed in claim 6 and substantially as herein described with reference to the accompanying drawings.
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